REMARKS

Claims 1 – 4, 8, 10, and 16 – 19 are now pending in the application. Claims 5 – 7, 9, and 11 – 15 are withdrawn. Claim 8 has been amended. Claims 16 – 19 are new. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1 – 4, 8 and 10 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Morimoto (U.S. Pat. No. 6,742,614). This rejection is respectfully traversed.

At the outset, Applicants respectfully note that Morimoto is specifically directed to improving fuel consumption while avoiding engine stall for a hybrid vehicle. Morimoto provides a control system 12 including a deceleration detector (idle switch 20) for detecting deceleration of a vehicle 2. Once a deceleration of the vehicle 2 is detected, a fuel cut control device 18 cuts fuel supply to the engine 4. When the engine speed drops to a predetermined return speed, the fuel cut control is cancelled and fuel supply to the engine 4 is restarted. A motor 10 is disposed between the engine 2 and a clutch 8 and connected to an output axle of the engine 4. A motor controller 16 is connected to a battery 30 which supplies the motor 10 with driving power. The motor controller 16 controls the motor 10 to drive and execute assist control when the engine speed decreases

below a return engine speed. Further, the motor controller 16 also controls the motor 10 to stop assist-control when the engine speed is more than a set speed.

The control of Morimoto is initiated upon detection of a small throttle opening, or during a vehicle deceleration. Specifically, the fuel cut control device is started when the throttle opening is small and the idle switch 20 is turned on to decelerate the vehicle 2. Fuel supply to the engine is returned by stopping the fuel cut control device after a predetermined period when the clutch 8 is disengaged to permit the engine to be in a free state (time B2, FIG. 3). At the same time, the motor 10 is driven for a predetermined time T4 to assist the engine to not stall. Then the engine speed converges at the idle engine speed. See e.g., Col. 4, Lines 51 – 61.

Applicants respectfully submit that Morimoto does not disclose or suggest control of an engine having displacement on demand. The instant invention is specifically directed toward the challenges associated with smoothing torque output on a crankshaft during a transition between activated (all cylinders operating) and deactivated (less than all cylinders operating) driving modes.

The Examiner has stated "Morimoto teaches a control system for a displacement on demand engine comprising: an engine 4 having a crankshaft … and a controller 12 that communicates with said engine and said FSG and adjusting torque output to said crankshaft to reduce engine speed variation during cylinder deactivation (Col. 6)". Applicants respectfully point out that nowhere in Col. 6 or elsewhere in Morimoto is displacement on demand or cylinder deactivation discussed or implied.

Claim 1 as submitted provides a controller that communicates with the engine and the FSG and that initiates cylinder deactivation during engine operation. The FSG adjusts torque output to the crankshaft to reduce engine speed variation during cylinder deactivation.

Claim 8 has been amended to provide a method including transitioning between an activated operating mode wherein all of the cylinders are operating and a deactivated operating mode wherein less than all of the cylinders are operating; and adjusting torque output caused by an unrequested change in engine speed in the deactivated mode.

New claim 16 provides a method including operating the engine in one of a first mode wherein all of the cylinders are operating and a second mode wherein less than all of the cylinders are operating; operating the engine in the other of the first mode and second mode defining a transition; and adjusting torque output to the crankshaft using the FSG to reduce engine speed variation caused by an unrequested change in engine speed during the transition.

As discussed above, Morimoto does not teach or suggest such features. In view of the foregoing, reconsideration and withdrawal of the rejections to claims 1 – 4, 8 and 10 are respectfully requested. Further, Applicants submit that new claims 16 – 19 define patentable subject matter.
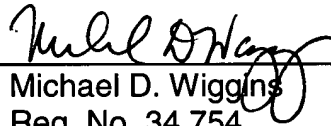
CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully

requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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